CLAIMS:

1. A method for the production of an olefin co-polymer for producing an olefin co-polymer wherein the monomers are evenly distributed throughout the length of each polymer molecule, which method comprises co-polymerising two or more olefin monomers in the presence of a metallocene catalyst, wherein the metallocene catalyst comprises a metallocene having the following formula:

$$R''(CpR_m)(FluR'_n)MQ_2$$

wherein Cp comprises a cyclopentadienyl ring; Flu comprises a fluorenyl ring; R'' comprises a structural bridge imparting stereorigidity to the component; each R is the same or different and is an organic group; m is an integer of from 1-4; each R' is the same or different and is an organic group; n is an integer of from 0-8; M is a metal atom from group IVB of the Periodic Table or is vanadium; and each Q is a hydrocarbon having from 1-20 carbon atoms or is a halogen.

2. A method according to claim 1, wherein at least one group R is positioned on the cyclopentadienyl ring such that it is distal to the bridge R''.

3. A method according to claim 1 or claim 2, wherein at least one group R comprises a bulky group of the formula ZR^*_3 in which Z is an atom from group IVA of the Periodic Table and each R* is the same or different and is chosen from a hydrogen or a hydrocarbyl group having from 1-20 carbon atoms.

4. A method according to any preceding claim, wherein at least one further group R comprises a group of the formula $YR\#_3$ in which Y is an atom from group IVA of the Periodic Table, and each R# is the same or different and is chosen from a hydrogen or a hydrocarbyl group having from 1-7 carbon atoms.

5. A method according to any of claims 2-4, wherein the cyclopentadienyl ring comprises a substituent ZR^*_3 distal to the bridge R" and a substituent $YR\#_3$ proximal to the bridge and non-vicinal to ZR^*_3.

6. A method according to any preceding claim, wherein the fluorine ring comprises a substituent at the 3-position and/or at the 6-position, or at the 2-position and/or at the 7-position.

7. A method according to any one of claims 2 to 6, wherein ZR^*_3 is selected from $C(CH_3)_3$, $C(CH_3)_2Ph$, CPh_3, and $Si(CH_3)_3$.

8. A method according to any one of claims 3 to 7, wherein $YR\#_3$ comprises CH_3.

9. A method according to any one of the preceding claims, wherein R" comprises a silyl radical or a hydrocarbyl radical having at least one carbon atom to form the bridge.

10. A method according to any one of the preceding claims, wherein M is Ti, Zr, or Hf.

11. A method according to any one of the preceding claims, wherein Q is Cl or methyl.

12. A method according to any one of the preceding claims, wherein ethylene is employed as an olefin monomer.

13. A method according to any one of the preceding claims, wherein propylene is employed as an olefin monomer.

14. Use of a metallocene catalyst for producing an olefin co-polymer wherein the monomers are evenly distributed throughout the length of each polymer molecule and wherein the metallocene catalyst comprises a metallocene having the following formula:

$$R''(CpR_m)(FluR'_n)MQ_2$$

wherein Cp comprises a cyclopentadienyl ring; Flu comprises a fluorenyl ring; R'' comprises a structural bridge imparting stereorigidity to the component; each R is the same or different and is an organic group; m is an integer of from 1-4; each R' is the same or different and is an organic group; n is an integer of from 0-8; M is a metal atom from group IVB of the Periodic Table or is vanadium; and each Q is a hydrocarbon having from 1-20 carbon atoms or is a halogen.

15. Use according to claim 14, wherein the metallocene compound is a compound as defined in any of claims 2 to 11.

16. Use according to claim 14 or claim 15 for forming an ethylene/propylene co-polymer wherein the monomers are evenly distributed throughout the length of each polymer molecule and having a melting temperature of about 105 °C.

17. An olefin co-polymer wherein the monomers are evenly distributed throughout the length of each polymer molecule, obtainable according to a method as defined in any of claims 1 to 13.